

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
7 April 2005 (07.04.2005)

PCT

(10) International Publication Number
WO 2005/031802 A3

(51) International Patent Classification⁷: **B05D 7/00**,
B32B 15/02, C09D 11/00

(21) International Application Number:
PCT/US2004/030995

(22) International Filing Date:
22 September 2004 (22.09.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/505,461 24 September 2003 (24.09.2003) US

(71) Applicant (for all designated States except US): **THE REGENTS OF THE UNIVERSITY OF CALIFORNIA** [US/US]; 1111 Franklin Street, 12th Floor, Oakland, CA 94607-5200 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WEISS, Shimon** [US/US]; 1743 Glendon Avenue, Apt. No.101, Los Angeles, CA 90024 (US). **TSAY, James, M.** [US/US]; 3751 Midvale Avenue, Los Angeles, CA 90034 (US). **PFLUGHOEFFT, Malte** [DE/DE]; Universitat Hamburg, Bundesstr. 45, 20146 Hamburg (DE).

(74) Agent: **OLDENKAMP, David, J.**; Shapiro & Dupont LLP, 233 Wilshire Boulevard, Suite 700, Santa Monica, CA 90401 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

Published:

— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
11 August 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

BEST AVAILABLE COPY

(54) Title: **HYBRID SYNTHESIS OF CORE/SHELL NANOCRYSTALS**

(57) Abstract: Nanocrystals that include a core/shell structure in which the a core of semiconductor material is coated with an inorganic capping agent. The nanocrystals are made by initially providing nanocrystal precursors that include a solubility agent which renders the precursors soluble in an organic solvent. The nanocrystal precursors are then coated with the inorganic capping agent in the presence of an organic solvent.

WO 2005/031802 A3